Semantic Derivation

Semantic Derivation Play+ Semantic Derivation Guide ■ Overview ■ Semantic tokens are the heart of Play+'s theming model. They allow you to build visually rich and brand-flexible UI experiences by mapping global raw values to meaningful roles. This document explains how semantic tokens are derived, when to use them, when to avoid them, and how the Play+ theming engine operates. Token Architecture Summary ■ Tier Token Type Ownership Usage Scope Overridable? Example 1 Global Tokens Play+ Core Raw values (e.g., colors, spacing) (Do not override) --global-color-pink-500 2 Semantic Tokens User/Theme Design roles (e.g., primary text) Theme-specific --color-brand-primary 3 Component Tokens Advanced Usage Component-specific overrides Scoped --component-button-padding-vertical How the Engine Runs ■ The Play+ Theming Engine loads when your application initializes or when a theme is switched at runtime. Here's how it operates: Loads the base CSS (_base.css) to get the global and default semantic tokens. Loads theme CSS files from the current brand/theme directory (e.g., _enterprise.css). Applies mappings of semantic tokens → new global tokens via CSS custom properties. Applies derived states (e.g., hover, active, focus, dark variants) based on naming rules. Injects final token map into :root and watches for hot-swappable updates. This engine ensures the entire application theme is controlled via lightweight CSS files, making live previews and runtime updates seamless. What Gets a Semantic Token (and What Doesn't) ■ Category Needs Semantic Token? Reason Brand Colors Changes between themes; context-aware. Text Colors Needs adaptive contrast. Backgrounds May shift in dark/light themes. Typography (Fonts) Brands may change body/heading fonts. Motion Patterns Shared Play+ motion language; not brand-specific. Shadow/Elevation Generally consistent across brands. Radius (Partial) Use semantic token if branding requires it. Icon Sizes Functional sizes; unlikely to vary. Accessibility Tokens Used by accessibility-aware components. Token File Responsibilities ■ Path Purpose styles/tokens/_base.css Contains all global (raw value) tokens and defines the CSS variables for semantic tokens with their base fallback values styles/tokens/themes/_enterprise.css Maps semantic tokens to new global values for a specific brand. The engine falls back to _default.css if no theme is loaded. Never edit _base.css directly to theme your app. Instead, override semantic tokens via theme CSS files. Default Semantic Token List ■ This list comes from _base.css and serves as the baseline for all themes: Colors ■ --color-brand-primary --color-brand-secondary --color-brand-primary-hover --color-text-primary --color-text-secondary --color-text-disabled

--color-text-on-brand --color-surface-interactive-default --color-surface-disabled --color-border-default --color-border-focus Typography ■ --font-family-display --font-family-heading --font-body-1 , --font-body-2 --font-heading-h1 , --font-heading-h2 Motion ■ --motion-pattern-fade --motion-pattern-slide --motion-pattern-pop Layout & Spacing ■ --layout-max-width --layout-gutter-default Accessibility ■ --accessibility-focus-ring-color --accessibility-focus-ring-style Iconography ■ --icon-size-md --icon-size-lg Content ■ --content-line-measure Glassmorphism ■ --glass-backdrop-blur --glass-background-color Example Derivation Map (Default Theme) ■ Semantic Token Mapped Global Token --color-brand-primary --global-color-pink-500 --color-brand-primary-hover --global-color-pink-700 --color-brand-secondary --global-color-purple-500 --color-text-primary --global-color-gray-700 --color-text-secondary --global-color-gray-600 --color-text-disabled --global-color-gray-400 --color-text-on-brand --global-color-white --color-surface-interactive-default --global-color-pink-500 --color-surface-disabled --global-color-gray-200 --color-border-default --global-color-gray-300 --color-border-focus --global-color-pink-500 --font-family-display --global-font-family-display --font-family-heading --global-font-family-heading --font-family-body --global-font-family-body --motion-pattern-fade --global-motion-duration-swift + easing --layout-gutter-default --global-spacing-4 --glass-backdrop-blur 12px Naming Convention Guidelines ■ Type Prefix Example Color color- color-surface-disabled Typography font- font-heading-h1 Radius radius- radius-md Motion motion-pattern- motion-pattern-slide Layout layout- layout-gutter-default Icon icon- icon-size-md Content content- content-line-measure Accessibility accessibility- accessibility-focus-ring-width Best Practices ■ Never use global tokens directly in components. Derive all design decisions through semantic tokens. Only use component-level tokens for scoped overrides or design exceptions. Document all brand themes via theme CSS files. Use fallback defaults to ensure graceful degradation. Theme Switching ■ Play+ supports runtime theming: // Switch themes by setting data attribute document . documentElement . setAttribute ("data-theme" , "enterprise") ; Final Note ■ Semantic tokens are what make Play+ adaptable, accessible, and maintainable at scale. They are not an extra layer — they are the design language. "Let your brand breathe — one token at a time."

```
// Switch themes by setting data attribute
document.documentElement.setAttribute("data-theme", "enterprise");
```